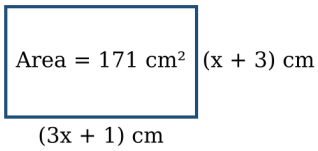
Day 55	S Tier 10-a-day
1 Uma, Carlos and Noah share some stickers. Uma : Carlos = 5 : 6 Carlos : Noah = 2 : 4 (a) Work out the ratio Uma : Carlos : Noah. (b) Noah gets 49 stickers more than Uma. How many stickers does Noah get?	
2 a = 3 and b = 1.2, both correct to 1 decimal place. Work out the lower bound of a + b.	
3 Solve $\sin x = \frac{\sqrt{3}}{2}$ for $0° \leq x \leq 360°$. Do not use a calculator.	
4 Simplify fully $\frac{3x^4y^3 \times 4xy^5}{4x^6y}$ Give your answer in the form kx^ay^b	
5 The price of a tablet is increased by 50%. Later the new price is reduced by 10% in a sale. The sale price is £324. Work out the price before the increase. (Calculator)	

Day 55	S Tier 10-a-day

6 The diagram shows a rectangle of length (3x + 1) cm, width (x + 3) cm and area 171 cm^2.
(a) Show that $3x^2 + 10x - 168 = 0$.
(b) Work out the length of the diagonal of the rectangle. Give your answer correct to 3 significant figures.



7 The nth term of a sequence is $2n^2 + 7n - 4$.
(a) Work out the 10th term.
(b) Is 485 a term of the sequence? You must show your working.

8 T is inversely proportional to the square root of n.
When n = 1, T = 15.
Find the value of T when n = 25.

9 (a) Show that the equation $x^3 - 2x - 35 = 0$ has a solution between x = 3 and x = 4.
(b) Show that the equation can be rearranged to give $x = \sqrt[3]{2x + 35}$

10 Simplify $\frac{2}{4 + \sqrt{10}} + \frac{3}{4 - \sqrt{10}}$
Give your answer with a rational denominator.